160295

Riedel Environmental Services
500 Eastern Ave.
BENSONVILLE, IL. 60106

ATTN: Mark Douglas

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32615
PO: 8168
PROJECT NO: SAUGET, SITE G

ANALYSIS RESULTS

SAMPLE ID: SW-2 NORTH FENCE
LAB ID: 9506000344-001
DATE COLLECTED: 06/14/95 15:30
DATE RECEIVED: 06/19/95 15:31

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<0.200 mg/L	6/27/95 R.D.
TOTAL BARIUM	SW-846 6010A	5.28 mg/L	
TOTAL CADMIUM	SW-846 6010A	0.0710 mg/L	
TOTAL CHROMIUM	SW-846 6010A	0.502 mg/L	
TOTAL COPPER	SW-846 6010A	7.58 mg/L	
TOTAL LEAD	SW-846 6010A	1.62 mg/L	
TOTAL MERCURY	SW-846 7470A	0.01240 mg/L	
TOTAL NICKEL	SW-846 6010A	1.02 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.300 mg/L	
TOTAL SILVER	SW-846 6010A	0.02700 mg/L	
TOTAL ZINC	SW-846 6010A	27.4 mg/L	
	EPA 150.1	4.10	6/23/95 E.A.

June 29, 1995

Wayne L. Cooper RLS
Laboratory Director

RIEDEL ENVIRONMENTAL SERVICES
500 EASTERN AVENUE
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QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SW-2 NORTH FENCE
LAB ID: 9506/344-001

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.
ARSENIC	<0.200	4.000	3.69	92
BARIUM	5.28	4.000	6.66	34
CADMIUM	0.071	0.100	0.149	78
CHROMIUM	0.502	0.400	0.748	62
COPPER	7.58	0.500	6.53	--
LEAD	1.62	1.000	1.866	24
MERCURY	0.0124	0.010	0.0229	105
NICKEL	1.02	1.000	1.78	76
SELENIUM	<0.300	4.000	4.20	105
SILVER	0.027	0.100	0.112	85
ZINC	27.4	1.000	26.8	--

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PREPARATION BLANK

ICP/AA

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
COPPER	<0.025
LEAD	<0.100
MERCURY	<0.0002
NICKEL	<0.040
SELENIUM	<0.200
SILVER	<0.040
ZINC	<0.020

LABORATORY CONTROL SAMPLE

ICP/AA

ELEMENT	VALUE	RESULT	%RECOVERY
ARSENIC	2.00	1.90	95
BARIUM	2.00	1.96	98
CADMIUM	0.50	0.502	100
CHROMIUM	0.50	0.494	99
COPPER	0.50	0.495	99
LEAD	0.50	0.437	87
MERCURY	0.002	0.00214	107
NICKEL	0.50	0.494	99
SELENIUM	2.00	1.89	94
SILVER	0.50	0.496	99
ZINC	0.50	0.485	97

CASE NARRATIVE

Metals

REQUIREMENTS FOR ANY QA/QC LEVEL

Please Note: If a CLP Package or the USEPA QA/QC Reporting Package known as "Quality Assurance/Quality Control - Guidance for Removal Activities" is requested all QA/QC reporting documentation required in those documents takes precedence over these requirements.

- General Requirements/Information (Required for all QA/QC Levels)

1. Date sampled _____ Date received 6/19/95

2. Number of samples received 1

3. Sample description SW-2 North Face - Ground Water

4. Sample preparation date 6/26/95
   Date extracted (if applicable) _____

5. Date analyzed 6/27/95 Time analyzed _____
   Analyst RD/JN

6. Did Riedel indicate a specific method? Yes ___ No ___

   a. If Yes, what was that method? _____

7. Did Riedel specify additional QA/QC requirement beyond the minimum and mandatory items? Yes ___ No ___ If yes, please specify. _____

   a. What QA/QC level was requested?_____ Used by lab?_____

   b. If lab used a different QA/QC level than requested by Riedel, an explanation must be supplied by lab._____

- QC Remarks (Required as relates to QA/QC level requested)

1. Were holding times met? Yes ___ No ___ If No, why? _____

2. Test Methods

   a. Parameters RCRA-8 Metals + Co, Ni, Zn
   b. *Approved* Methods 6010A / 7470
   c. Was a cleanup method requested *for Semi-Volatile Organic Analyses?* N/A

      1. Yes ___ No ___
      2. If No, what method was used and why?_____
      3. If Yes, identify method used? _____

Attachment 1

Case Narrative: Riedel Environmental Services

Project: 8168-02

Summary of MS & MSD Analysis:

Ba, Pb, & Cr	Recoveries were below 75%; however, RPD was below 20%.
Cu & Zn	Spike samples returned no spike recovery.

Two analytical spikes were performed as further investigation. Barium, lead, & chromium returned acceptable recoveries. Copper and zinc did give recoveries but none over 30%. Higher analytical spikes (Cu-10ppm/Zn-20ppm) did return acceptable recoveries.

We have no explanation at this time. However, sample preparation personnel reported difficulties preparing the sample due to violent expulsions when heat was applied. The sample may contain some water soluble organic compounds (i.e. alcohols).

3. Were peak resolutions *(i.e. Chromatograms)* requested? Yes ___ No ___ If Yes, please comment. N/A

4. Initial calibration (% Relative Standard Deviation) N/A

5. Has continuing calibration (% difference) been requested? If yes, indicate % difference. N/A

6. Were all Matrix Spikes/Matrix Spike duplicates < 20% RSD? Yes ___ No X

   a. If Yes, indicate I.D. No. and %. See Attachment
   b. If No, indicate I.D. No. and %, plus why the < 20% RSD was not obtained. _____

7. Were surrogates run *for Organic Analyses*? Yes ___ No ___

   a. If Yes, indicate type and recovery (Min. Recovery is 80%). _____
   b. If not, indicate why not. _____
   c. If min. recovery was not obtained, indicate why not? _____

8. Please provide the following as applicable.

   a. Minimum Detection Limits: _____
   b. Estimated Quantitation Limits: _____
   c. Dilution Factor:

9. Were *any other annomalies encountered during the analysis*? Yes ___ No ___

   a. If Yes, type: _____
   b. If Yes, why were they observed? _____

10. Was this laboratory work performed under either "Minimum and Mandatory Contractual Terms for Analytical Laboratories not on the Pre-Approved Midwest/Great Lakes Region Acceptance List" or a "Master Subcontract" with your laboratory, specifically for ERCS Region V? Yes X No ___

    a. If yes, Environmetrics states that the USEPA document known as "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures Interim Final EPA/540/G-90/004 April 1990" was utilized as guidance in the review and validation of all data for this project.

11. **WARNING!! NO DATA SHALL BE RELEASED** verbally, written, or otherwise to any authorized representative of Riedel Environmental Services, Inc. or their client that does not meet or exceed the QA/QC levels established in any written or verbal RFP for this project, or the requirements for any and all SW 846 Methods or EPA Methods utilized for this project.

Any incorrect data that is released to any authorized Riedel Environmental Services, Inc. representative or their client that causes improper site related work or disposal decisions to be made by Riedel Environmental Services, Inc. or their client, will cause Environmetrics to be completely liable for all costs associated with those decisions.